

REMARKS/ARGUMENTS

The subsea pipeline commissioning method and apparatus of the present invention accomplishes subsea pipeline cleaning, dewatering or hydrostatic testing that is completely subsea using a submersible vehicle (SV) that carries and operates at least one pump on a fill and test skid that is dimensioned and powered to be to perform any of the activities of cleaning (pigging), dewatering, and pressurizing to perform hydrostatic testing. The prior art of record provides no teaching of such an apparatus and thus no teaching of a method of its use. The present claims have been amended to clarify this novel and unique contribution to subsea pipeline service with its concomitant elimination of the need of a surface vessel having pumps on board the vessel to provide pumping capacity of a magnitude sufficient to conduct hydrostatic testing if desired.

I. Status of the Claims and Support for Amendments:

Claims 1- 10 are pending in the reissue application, of which claims 6 – 10 are new respective to the prior issued patent.

Amendments to the claims from the last amendment are as follows:

Amendments to claim 1: Claim 1 now clarifies that the “pump or pumps mounted on the test and fill package are dimensioned for cleaning, dewatering, and pressurizing to a sufficiently high pressure for hydrostatic pipeline testing.” While each of these activities might not be required in a given deployment, the pump or pumps mounted on the test and fill package are dimensioned to be capable of such activities.

Claim 2 has been amended to be as originally issued.

Claims 3, 5 and 10 are not amended in this response.

Claims 4, 6 and 7 are amended to clarify that the pump or pumps mounted on the test and fill package are dimensioned for pressurizing to a hydrostatic commissioning test pressure.

Amendments to claims 6 - 9: Claims 6 - 9 are amended to clarify that the one or more pumps including at least one high pressure pump are dimensioned for sufficient pumping to pressurize the pipeline to a high-pressure hydrostatic test pressure without need for a downline from a surface vessel.

Amendments to claims 7 and 8: Per the Examiner's suggestion, claims 7 and 8 are amended to clarify that the fill and test package is deployed subsea.

II. Rejections of claims 6 and 7 under §102 (a)

Claims 6 and 7 have been amended to clarify that the one or more pumps mounted on the fill and test package are adapted and are sufficient to pressurize the pipeline sufficiently for high-pressure hydrostatic testing without need for a downline from a surface vessel. As clarified in the Everard deposition, the "pressurization phase in the industry is known when you start from zero [pressure] and take it up to pressure." (Everard Deposition: pg. 31, lns. 10 – 15). This is in stark contrast to BJ PPS wherein the pipeline had already been conventionally filled and brought to hydrostatic commissioning pressure using a 2" coflexip down line connected to pumps on a surface vessel. (*Id.*: pg. 26, lns. 10 – 23). Because the already pressurized line of the BJ PPS project began to lose pressure, the ROV glycol pump was used as an emergency solution to deliver a very small amount of additional volume for "repressurization." (*Id.*: pg. 31, lns. 10 – 15). The BJ PPS ROV mounted glycol pump was dimensioned for and normally used to actuate subsea manifold valves (*Id.*: pg. 19, lns. 21 – 24) and was of such minimal capacity that its rated flow rate was in the order of "less than one millimeter per stroke." (*Id.*: pg. 20, lns. 4 – 5). Clearly, pressurizing the pipeline with the glycol pump would have been out of the question.

In BJ PPS, there was no test and fill package (pumping skid) and there were no subsea pumps dimensioned to fill or pressurize a pipeline. Had a higher flow rate been required than that available to top off the existing high pressure in the pipeline, it was admitted that use of the Coflexip down line would have been required. (*Id.*: pg. 20, lns. 15 - 20).

III. Rejections of claims 1, 3, 4, 8 and 9 under §103

Claims 1, 3, 4, 8 and 9 have been rejected under §103 over the combination of BJ PPS and Graves. Graves is asserted to teach pipeline flooding using hydrostatic pressure with pigging completion using a subsea pigging unit but is acknowledged to lack a high pressure pump dimensioned to provide hydrostatic testing pressure. The lack of a high pressure pump in Graves is asserted to be remedied by BJ PPS, which is asserted to provide a ROV operated high pressure pump. Independent claims 1, 4, 8 and 9 have been amended to clarify that at least one pump of the claimed test and fill package is dimensioned to provide pipeline commissioning without need for a

surface pressure connection. The claimed test and fill package includes at least one pump dimensioned to pressurize a subsea pipeline to a hydrostatic test pressure, meaning starting from essentially zero pressure and taking up to hydrostatic test pressure. As previously described in reference to the §102 rejection, this clearly differs from BJ PPS, which provides no teaching or suggestion of a skid mounted pump that is dimensioned to pressurize a pipeline. BJ PPS required the prior pressurization via surface vessel mounted pumps. Indeed, Everard, the project engineer for the BJ PPS project, when presented several years later with the possibility of a subsea hydrotesting pump, stated “I wish I had thought of a similar idea, because I’ve carried out a similar operation on a minor scale with a glycol pump in Brazil.” (*Id.*: pg. 30, ln 10 – 12). Apparently, even an individual associated with BJ PPS was not able to conceive of a skid mounted subsea pump able to deliver pressurize a pipeline to perform hydrostatic pressure testing.

The Examiner has stated that the deposition of Mike Dupre clearly indicates that high-pressure pumps powered by an ROV and coupled to ROV mounted skids were an established practice in the art of hydrotesting subsea pipelines and that the equipment needed already existed. This conclusion is respectfully but firmly traversed. The Dupre description of technology that did not exist but in his expressed opinion could have conceivably been done does not constitute any form of §102 art. It is noted that Dupre apparently based his opinion on a prior pressure testing of a manifold having a volume of 9 gallons (Dupre Deposition: pg. 22 – 23, referring to the Sonsub Macaroni project) and that significant modifications would have to be done for hydrotesting a flowline – including “wished” for equipment (Dupre Deposition: pg. 29, lns. 15 – 25).

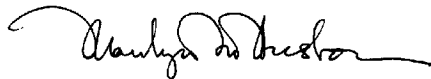
CONCLUSION

The Examiners approval of claim 10 is appreciated. For the reasons stated herein, the Applicant respectfully submits that the independent claims of the reissue application are now in condition for allowance and that the claims that depend therefrom are likewise in condition for allowance. Upon approval of the claims, a further reissue declaration will be obtained.

The Commissioner is authorized to charge any additional fees incurred in this application or credit any overpayment to Deposit Account No. 50-1922. Should the Examiner have any questions, please do not hesitate to call Applicant's attorney at 832-446-2421.

Respectfully submitted on February 23, 2009.

By



Marilyn M. Huston
Reg. No. 37,851
Wong, Cabello, Lutsch, Rutherford & Brucculeri, L.L.P.
20333 SH 249, Suite 600
Houston, TX 77070
(832) 446-2421
wcpatent@counselip.com

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Registration Number: 37,851